

CLASSIFICATION:

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EXHIBIT R-2, RDT&E Budget Item Justification							DATE:			
							February 2000			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY/BA-5					Navy Tactical Computer Resources/0604574N					
COST (\$ in Million:		FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Total PE Cost		27.042	57.978	3.291	4.092	4.131	4.286	4.529	CONT.	CONT.
Standard Hardware/21353		1.858	56.980	2.320	3.057	2.919	3.048	3.116	CONT.	CONT.
UYQ-70 Display Improvements/22647		14.520	0.000	0.000	0.000	0.000	0.000	0.000	0.000	14.520
Computer Aided Dead Reckoning Tracer/22648		4.840	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.840
AN/AYK-14/W0845*		4.759	0.000	0.000	0.000	0.000	0.000	0.000	0.000	28.372
NWTDB/X2265		1.065	0.998	0.971	1.035	1.212	1.238	1.413	CONT.	CONT.
Quantity of RDT&E Articles:										
*Project Unit W0845 is combined with P.E. 0604215N, Project Unit W0572 beginning FY00.										
A. Mission Description and Budget Item Justification: The Standard Hardware project in combination with UYQ-70 Display Improvements will perform the system engineering necessary to verify Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technologies and products as suitable for introduction into the AN/UYQ-70(V) Advanced Display System product line. The Computer Aided Dead Reckoning Tracer (CADRT) will automate the management plotting team and information distribution function currently performed manually, allowing automatic evaluation and processing of input data to generate real-time, multi-source integrated tactical data which is used to create a tactical picture to support the decision process. The Naval Warfare Tactical Data Base (NWTDB) is an information management infrastructure project to solve data interoperability problems and implement DoD data architecture and standards in Navy. NWTDB is the data architecture component of Copernicus. NWTDB has developed management and engineering processes to define and translate information needs to automated systems, and to manage changes resulting from new operational requirements or technology advances.										
B. Program Change Summary:										
				FY 1999		FY 2000		FY 2001		
FY 2000 President's Budget:				28.059		3.300		3.454		
Appropriated Value:				28.059		58.299				
Adjustment to FY 2000 Appropriated Value/				-1.017		-0.321		-0.163		
FY 2000 President's Budget:										
FY 2001 President's Budget Submit:				27.042		57.978		3.291		

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EXHIBIT R-2, RDT&E Budget Item Justification		DATE: <b>February 2000</b>
APPROPRIATION/BUDGET ACTIVITY <b>RESEARCH DEVELOPMENT TEST &amp; EVALUATION, NAVY/BA-5</b>		R-1 ITEM NOMENCLATURE Navy Tactical Computer Resources/0604574N
<p>Funding:   FY-99 funding decrease is due to minor adjustments (-\$1.017).               FY 00 funding decrease is due to minor adjustments (-\$0.321).               FY-01 funding decrease is due to minor adjustments (-\$0.163).</p> <p>Schedule: N/A</p> <p>Technical: N/A</p>		

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**Exhibit R-2, RDT&E Budget Item Justification**  
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EXHIBIT R-2a, RDT&E Project Justification							DATE: <b>February 2000</b>			
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-5</b>		PROGRAM ELEMENT NAME AND NUMBER <b>Navy Tactical Computer Resources/0604574N</b>			PROJECT NAME AND NUMBER Standard Hardware/21353					
COST (\$ in Millions)	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost		<b>1.858</b>	<b>56.980</b>	<b>2.320</b>	<b>3.057</b>	<b>2.919</b>	<b>3.048</b>	<b>3.116</b>	<b>CONT.</b>	<b>CONT.</b>
RDT&E Articles Qty										
<p>A. Mission Description and Budget Item Justification: Perform the system engineering necessary to verify Commercial-off-the-Shelf/Open System Architecture (COTS/OSA) technologies and products as suitable for introduction into the AN/UYQ-70(V) Advanced Display System product line.</p> <p>(U) Program Accomplishment and Plans:</p> <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"> <li>- (U) (\$0.858) Performed intensive study and testing of COTS/OSA technology that adheres to standards.</li> <li>- (U) (\$0.500) Adapted these technologies and products to the Navy's tactical display/processor needs in the future.</li> <li>- (U) (\$0.500) Met Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future.</li> </ul> <p>FY 2000 PLANS:</p> <ul style="list-style-type: none"> <li>- (U) (\$1.000) Perform intensive study and testing of COTS/OSA technology that adheres to standards.</li> <li>- (U) (\$0.480) Adapt these technologies and products to the Navy's tactical display/processor needs in the future.</li> <li>- (U) (\$0.500) Meet Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future.</li> <li>- (U) (\$20.000) Adapt AN/UYQ-70 for SSN 688/Trident applications</li> <li>- (U) (\$5.000) Continue to develop Computer-Aided Dead Reckoning Tracer (CADRT)</li> <li>- (U) (\$25.000) AN/UYQ-70 Technology Refreshment</li> <li>- (U) (\$5.000) Advanced Digital Logistics</li> </ul>										

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**Exhibit R-2a, RDT&E Project Justification**  
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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2000</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-5</b>	PROGRAM ELEMENT NAME AND NUMBER <b>Navy Tactical Computer Resources/0604574N</b>	PROJECT NAME AND NUMBER Standard Hardware/21353
<p>FY 2001 PLANS:</p> <ul style="list-style-type: none"><li>- (U) (\$1.000) Perform intensive study and testing of COTS/OSA technology that adheres to standards.</li><li>- (U) (\$0.620) Adapt these technologies and products to the Navy's tactical display/processor needs in the future.</li><li>- (U) (\$0.700) Meet Navy emerging surface, subsurface and airborne tactical display/processor requirements of the future.</li></ul> <p>B. Other Program Funding Summary: N/A</p> <ul style="list-style-type: none"><li>- (U) Related RDT&amp;E<ul style="list-style-type: none"><li>PE 0603270N (ELECTRONIC WARFARE ADVANCED TECHNOLOGY)</li><li>PE 0603382N (ADV COMBAT SYSTEM TECHNOLOGY)</li><li>PE 0603502N (SHALLOW WATER MCM)</li><li>PE 0603755N (COOPERATIVE ENGAGEMENT)</li><li>PE 0604307N (AEGIS WEAPON SYSTEM MODS)</li><li>PE 0604366N (STANDARD MISSILE IMPROVEMENTS)</li><li>PE 0604372N (NEW THREAT UPGRADE)</li><li>PE 0604755N (SHIP SELF DEFENSE)</li></ul></li></ul> <p>C. Acquisition Strategy: N/A</p> <p>D. Schedule Profile: N/A</p>		

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**Exhibit R-2a, RDT&E Project Justification**  
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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2000</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
<b>RDT&amp;E, N/BA-5</b>			<b>Navy Tactical Computer Resources/0604574N</b>			<b>Standard Hardware/21353</b>						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various	179.600	0.000		10.300		0.000		0.000	189.900	179.600
Ancillary Hardware Development						0.350					0.350	
Systems Engineering	Various	Various	14.000	1.096		29.404		1.515		CONT.	CONT.	CONT.
Licenses						0.500					0.500	
Tooling						0.500					0.500	
GFE											0.000	
Award Fees											0.000	
Subtotal Product Development			193.600	1.096		41.054		1.515		CONT.	CONT.	CONT.
Remarks:												
Development Support Equipment											0.000	
Software Development	Various	Various	32.373	0.000		4.500		0.000		0.000	36.873	32.373
Training Development						1.000					1.000	
Integrated Logistics Support						1.597					1.597	
Configuration Management						0.500					0.500	
Technical Data						0.738					0.738	
GFE											0.000	
Subtotal Support			32.373	0.000		8.335		0.000		0.000	40.708	
Remarks:												

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**Exhibit R-3, Project Cost Analysis**  
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Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2000</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-5</b>			PROGRAM ELEMENT <b>Navy Tactical Computer Resources/0604574N</b>			PROJECT NAME AND NUMBER <b>Standard Hardware/21353</b>						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	20.600	0.242		2.243		0.250		CONT.	CONT.	CONT.
Operational Test & Evaluation	Various	Various	15.090	0.170		0.978		0.180		CONT.	CONT.	CONT.
Tooling											0.000	
GFE											0.000	
Subtotal T&E			35.690	0.412		3.221		0.430		CONT.	CONT.	CONT>
Remarks:												
Contractor Engineering Support	Various	Various	10.700	0.300		1.400		0.300		CONT.	CONT.	CONT.
Government Engineering Support	Various	Various	25.000	0.000		2.500		0.000		0.000	27.500	N/A
Program Management Support						0.375					0.375	
Travel			1.477	0.050		0.095		0.075		CONT.	CONT.	N/A
Labor (Research Personnel)											0.000	
Overhead											0.000	
Subtotal Management			37.177	0.350		4.370		0.375		CONT.	CONT.	CONT.
Remarks:												
Total Cost			298.840	1.858		56.980		2.320		CONT.	CONT.	CONT.
Remarks:												

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**Exhibit R-3, Project Cost Analysis**  
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EXHIBIT R-2a, RDT&E Project Justification							DATE:				
							February 2000				
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NAME AND NUMBER				PROJECT NAME AND NUMBER					
RDT&E, N/BA-5		Navy Tactical Computer Resources/0604574N				Naval Warfare Tactical Data Base/X2265					
COST (\$ in Millions:			FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Project Cost			1.065	0.998	0.971	1.035	1.212	1.238	1.413	CONT.	CONT.
RDT&E Articles Qty											
<p>A. Mission Description and Budget Item Justification: The Naval Warfare Tactical Database (NWTDB) is an information management infrastructure project to solve data interoperability problems and implement DoD data architecture and standards in Navy. NWTDB is the data architecture component of Copernicus. NWTDB has developed management and engineering processes to define and translate information needs to automated systems and to manage changes resulting from new operational requirements or technology advances. Database integration, data standardization, and configuration management are supported by reverse engineering database structures and definitions into a common format to facilitate data interoperability problem identification and resolution. The management and engineering processes and authoritative database structures are documented in the NWTDB Standards Manual which is distributed to Navy C4ISR and combat system architects, system developers, reference database producers, other services and agencies, and selected foreign governments. The Data Analysis and Reconciliation Tool (DART), a Microsoft Windows-based application, is being evolved to support the full information management life cycle, i.e., linking databases and transfer formats to operational information requirements. DART supports systems documentation, configuration management, DoD standard data element generation, and requirements traceability. In August 1996, DASN C4I recommended the NWTDB process and DART to ASD C3I as a practical approach to solve data interoperability problems and support database integration, especially for the Global Command and Control System. NWTDB management process received OSD award in 1993. Management responsibilities are defined in OPNAVINST 9410.6 of 13 Jul 93, "NWTDB Requirements for Tactical Naval Warfare Systems," which implements DoD Directive 8320.1 of 26 Sep 91, "DoD Data Administration." OPNAVINST 9410.6 also specifies that Navy system developers and database producers will transition to NWTDB data standards and structures by the year 2000.</p>											

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**Exhibit R-2a, RDT&E Project Justification**  
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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2000</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-5</b>	PROGRAM ELEMENT NAME AND NUMBER <b>Navy Tactical Computer Resources/0604574N</b>	PROJECT NAME AND NUMBER Naval Warfare Tactical Data Base/X2265
<p>(U) Program Accomplishment and Plans:</p> <p>FY 1999 ACCOMPLISHMENTS:</p> <ul style="list-style-type: none"><li>- (U) (\$0.050) Developed final DART 3.0 User's Guide.</li><li>- (U) (\$0.180) Continued to register Naval tactical systems, coordinating with FIWC/DRWG (emphasis on mission planning databases) and changes to the NWTDB Standards Manual – Version Four.</li><li>- (U) (\$0.180) Developed DART 3.1 configuration management and metadata warehousing features to support data fusion/pull.</li><li>- (U) (\$0.041) Expanded TADIL screens and comparison to USMTF and database elements.</li><li>- (U) (\$0.070) Tested DART 3.1 and finalized build.</li><li>- (U) (\$0.090) Developed DART 3.1 User's Guide.</li><li>- (U) (\$0.170) Collected data and prototype in DART a capability linking systems data requirements to mission traceability to support CIO assessment.</li><li>- (U) (\$0.060) Developed NWTDB Standards Manual – Version Four as an on-line publication.</li><li>- (U) (\$0.135) Expanded Naval C4I Engineering Data models for combat ID and mission planning.</li><li>- (U) (\$0.089) Provided Technical support to implement DoD architecture and data standards process, including coordination with NATO GROUP 5.</li></ul>		

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**Exhibit R-2a, RDT&E Project Justification**  
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EXHIBIT R-2a, RDT&E Project Justification		DATE: <b>February 2000</b>
APPROPRIATION/BUDGET ACTIVITY <b>RDT&amp;E, N/BA-5</b>	PROGRAM ELEMENT NAME AND NUMBER <b>Navy Tactical Computer Resources/0604574N</b>	PROJECT NAME AND NUMBER <b>Naval Warfare Tactical Data Base/X2265</b>
<p>FY 2000 PLANS:</p> <ul style="list-style-type: none"><li>- (U) (\$0.079) Develop DART 3.2 and user guide to include HTML online publishing capability.</li><li>- (U) (\$0.480) Continue to register Naval tactical systems with emphasis on track data and data link message sets as coordinated with FIWC/DRWG.</li><li>- (U) (\$0.030) Participate with CRWG to identify and resolve selected data fill/data format issues. Prioritize issues with recommendations to program office on which ones to address.</li><li>- (U) (\$0.165) Establish procedures for real-time standards management on the Worldwide Web. Publish Version Six online, with ongoing continuing updates.</li><li>- (U) (\$0.124) Enhance DART with a capability for linking systems data requirements to mission traceability to support CIO assessment.</li><li>- (U) (\$0.120) Act as liaison to DISA data standardization efforts to promote Navy standards and submit data models/data elements as candidate DoD standards.</li></ul> <p>FY 2001 PLANS:</p> <ul style="list-style-type: none"><li>- (U) (\$0.120) Enhance DART in accordance with program plan for program office..</li><li>- (U) (\$0.320) Continue participation with FIWC/DRWG to prioritize data fill/data standardization issues. Prepare and document data standards as agreed upon by DRWG.</li><li>- (U) (\$0.066) Develop DART users guide.</li><li>- (U) (\$0.125) Participate with CRWG to identify and resolve selected data fill/data format issues. Prioritize issues with recommendations to program office on which ones to address.</li><li>- (U) (\$0.180) Maintain the NWTDB standard on tghe Web with near-continuous updates. Create comprehensive Web site with applicable Navy/DoD publications, instructions, links and guidance to system developers on information engineering.</li><li>- (U) (\$0.160) Act as liaison to DISA data standardization efforts to promote Navy standards and submit data models/data elements as candidate DoD standards.</li></ul> <p>B. Other Program Funding Summary: N/A (U) Related RDT&amp;E: N/A</p>		

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**Exhibit R-2a, RDT&E Project Justification**  
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Exhibit R-3 Cost Analysis (page 1)								DATE: <b>February 2000</b>				
APPROPRIATION/BUDGET ACTIVITY <b>RDTE&amp;E, N/BA-5</b>			PROGRAM ELEMENT <b>Navy Tactical Computer Resources/0604574N</b>			PROJECT NAME AND NUMBER <b>Naval Warfare Tactical Data Base/X2265</b>						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering	BPA	ORCI, Hanahan, SC	0.666	0.375	10/98	0.581	10/99	0.570	10/00	CONT.	CONT.	CONT.
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development			0.666	0.375		0.581		0.570		CONT.	CONT.	CONT.
Remarks:												
Development Support Equipment												
Software Development	BPA	ORCI, Hanahan, SC	0.995	0.501	10/98	0.203	10/99	0.186	10/00	CONT.	CONT.	CONT.
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support			0.995	0.501		0.203		0.186		CONT.	CONT.	CONT.
Remarks:												

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**Exhibit R-3, Project Cost Analysis**  
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Exhibit R-3 Cost Analysis (page 2)								DATE: <b>February 2000</b>				
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER						
<b>RDT&amp;E, N/BA-5</b>			<b>Navy Tactical Computer Resources/0604574N</b>			<b>Naval Warfare Tactical Data Base/X2265</b>						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation												
Operational Test & Evaluation												
Tooling												
GFE												
Subtotal T&E			0.000	0.000		0.000		0.000			0.000	
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support	BPA	BAH, San Diego, CA	0.065	0.030	10/98	0.042	10/99	0.042	10/00	CONT.	CONT.	CONT.
Program Management Support	FFP	PRC, San Diego, CA	0.060	0.150	10/98	0.150	10/99	0.150	10/00	CONT.	CONT.	CONT.
Travel	N/A	SPAWAR, San Diego, CA	0.061	0.009	N/A	0.022	N/A	0.023	N/A	CONT.	CONT.	N/A
Labor (Research Personnel)												
Overhead												
Subtotal Management			0.186	0.189		0.214		0.215		CONT.	CONT.	CONT.
Remarks:												
Total Cost			1.847	1.065		0.998		0.971		CONT.	CONT.	CONT.
Remarks:												

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**Exhibit R-3, Project Cost Analysis**  
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